

Application No. 10/039,947
SD-6858 Moore

REMARKS

Status of the Claims

- Claims 2-30, 32-37, 39-43, 46-54, and 56-65 are pending.
- Claims 2-22, 24, 25, 27-30, 33-37, 39-43, 46-52, 54 and 56-65 are allowed.
- Claims 23, 26, 32, and 53 are rejected.

Allowable Claims

Applicants gratefully acknowledge the allowance of claims 2-22, 24, 25, 27-30, 33-37, 39-43, 46-52, 54 and 56-65.

Rejected Claims

Claim 23 is rejected under 35 USC 102(b) as being anticipated by Schuster et al. (US patent 5,2114,592).

In response, applicants have amended claim 23 to replace the word "disposed" with "coated". Amended claim 23 now recites that the magnesium hydroxide is **coated on the surface of a carrier particle**. Support for this change can be found in the specification at page 10, lines 17-18.

"Alternatively, the MgO or Mg(OH)₂ sorbent material can be coated onto a carrier or substrate particle, such as sand or glass microspheres."

Shuster et al. do not teach or suggest using a carrier particle **coated** on its surface with MgO or Mg(OH)₂ sorbent material. Since Shuster et al. do not teach all of the elements of claim 23, as currently amended, the rejection under 35 USC 102(b) is improper and should be withdrawn.

Accordingly, claim 23 is now in condition for allowance.

BEST AVAILABLE COPY

Application No. 10/039,947
SD-6858 Moore

Claims **26** and **53** both depend from claim **23**. Since claim **23** is now in condition for allowance, it follows that dependent claims **26** and **53** are also in condition for allowance.

Claim **32** is rejected under 35 USC 102(b) as being anticipated by either Galbacs et al. publication or by Schuster et al.

In response, applicants have amended claim **32** to recite that the water has a **significant concentration of carbonate, greater than 150 ppm**; that the contact time is **greater than 2 minutes**; and that the contact time is **less than 1 hour**. The specification fully supports these amendments. The specification states:

"Carbonate, such as calcium carbonate, CaCO_3 , is frequently present in water containing high natural arsenic levels. Even tap water can contain significant concentrations of carbonate (e.g., 150 ppm in Albuquerque tap water)." See p. 5, lines 17-19.

Support for limiting the contact time to being **greater than 2 minutes** can be found in Tables 1 and 2. Support for limiting the contact time to being **less than 1 hour** can be found at page 7, lines 11-12.

Neither Galbacs et al. publication or Schuster et al. teach or suggest that the contact time between magnesium oxide/hydroxide and water with carbonate be limited to being **less than 1 hour**. The reason that they don't teach this restriction on contact time is the fact that they don't appreciate or understand the problem of undesirable arsenic release when magnesium hydroxide (with adsorbed arsenic) converts to magnesium carbonate, when there is a significant concentration of carbonate present in the water. Since the references cited by the Office do not teach all of the elements of claim **32**, as currently amended, the rejection under 35 USC 102(b) is improper and should be withdrawn.

Accordingly, claim **32** is now in condition for allowance.

Application No. 10/039,947
SD-6858 Moore

New Claim 66

New claim **66**, which depends from **32**, was added to further limit the contact period of time to being less than 30 minutes. Support for limiting the contact time to being **less than 30 minutes** can be found at page 7, lines 11-12. As presented above, neither Galbacs et al. publication or Schuster et al. teach or suggest that the contact time between magnesium oxide/hydroxide and water with carbonate be limited to being **less than 30 minutes**.

Accordingly, new claim **66** is now in condition for allowance.

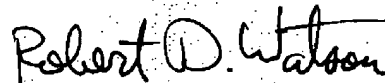
Application No. 10/039,947
SD-6858 Moore

Conclusion

Applicants have responded to each and every objection and rejection, and urge that the claims as presented and currently amended, plus new claim 66, are now in condition for allowance. Applicants request expeditious processing to issuance.

The Office is authorized to charge **Deposit Account # 19-0131** for any necessary fees regarding this response, including \$ 50 for one additional new claim.

Respectfully submitted,



Robert D. Watson
Reg. No. 45,604

Ph: (505) 845-3139
Fax: (505) 284-3453
e-mail: rdwatso@sandia.gov

Sandia National Laboratories
P.O. Box 5800 MS-0161
Albuquerque, NM 87185-0161

Customer No. **20567**

Certificate of Transmission under 37 CFR 1.10

I hereby certify that this correspondence was transmitted via facsimile to the
U.S. Patent and Trademark Office at phone no. 703-872-9306
on 1/10/2005 (date).



Robert D. Watson

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.